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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/062,833	01/30/2002	Clinton S. Hartmann	RFSC-0006	4339

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HITT GAINES P.C.
P.O. BOX 832570
RICHARDSON, TX 75083

EXAMINER	
PATHAK, SUDHANSHU C	
ART UNIT	**PAPER NUMBER**
2611	

DATE MAILED: 04/05/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/062,833	HARTMANN, CLINTON S.	
	Examiner	Art Unit	
	Sudhanshu C. Pathak	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *January 12th, 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *11-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *11-20* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *August 6th, 2004* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. Claims 11-20 are pending in the application.
2. Claims 1-10 have been canceled.

Response to Arguments

3. Applicant's arguments, filed on January 12th, 2006, with respect to 35 U.S.C. 112 rejections have been fully considered and are persuasive. The rejections of have been withdrawn.
4. Applicant's arguments, filed on January 12th, 2006, with respect to 35 U.S.C. 103 rejections have been fully considered but they are not persuasive.
   - In regards to the specific argument(s) presented that ".....nowhere does McCorkle teach or suggest that data can be encoded on a pulse spanning a period of time where such period of time is divided into a group of time slots, each of which has its own unique phase and time position.....", this limitation is taught by the Applicant Admitted Prior Art (AAPA) in view of McCorkle, and thus a 103 rejection. The AAPA teaches ".....data can be encoded on a pulse spanning a period of time where such period of time is divided into a group of time slots, each of which has its own unique time position....." as disclosed in the rejection below. However the AAPA does not disclose the pulse to encode a data element not only by a unique time position but also (and) by a unique phase position. McCorkle teaches implementing a combination-modulating scheme such as PPM-bi-phase modulation or multilevel quadrature phase modulation wherein each data

is encoded with a unique time and phase, as disclosed in the rejection below. Furthermore, the Office has provided a motivation to combine the references as disclosed in the McCorkle reference (Page 6, Paragraph 77) "...so as to increase the bits per hertz transmitted as well as reducing the amount of transmitted power per symbol transmitted to transmit a predetermined amount of data...".

- In regards to the specific argument presented that ".....no objective factor has been specifically set forth why a person of ordinary skill in the pertinent art would be motivated to combine the respective references.....", the Office has provided an objective motivation to combine the references as disclosed in the McCorkle reference (Page 6, Paragraph 77) "...so as to increase the bits per hertz transmitted as well as reducing the amount of transmitted power per symbol transmitted to transmit a predetermined amount of data...".

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 11, 13-17 & 19-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of McCorkle (PG-PUB. 2002/0064245).

Regarding to Claims 11, 13-17 & 19-20, the Applicant Admitted Prior Art (AAPA) discloses a method of propagating a signal comprising designating a period of time spanned by a pulse (Fig. 1, element 105 & Specification, Page 10, lines 1-22 & Specification, Page 11, lines 1-20), said period of time divided into a group of time slots (Fig. 1, element 120 & Fig. 2, element 220 & Specification, Page 10, lines 1-22 & Specification, Page 11, lines 1-20), each of said time slots having a unique time position (Fig. 1, element 110 & Specification, Page 10, lines 1-22 & Specification, Page 11, lines 1-20); and causing said pulse to encode a data element by said unique time position (Fig. 1 & Fig. 2 & Specification, Page 1, Paragraph 2 & Specification, Page 2, Paragraphs 3-4 & Specification, Page 10, lines 1-22 & Specification, Page 11, lines 1-20). The AAPA also discloses said time slots in said group are adjacent (Fig. 1, element(s) 120 (from –5-to-0 & from 0-to-5 these are adjacent time slots)). The AAPA also discloses said time slots in said group are not adjacent (Fig. 1, element(s) 120 (from –5-to-0 & from 10-to-15 these are non-adjacent time slots)). The AAPA also discloses more than one pulse is located within said group of time slots so as to increase the data density (Fig. 2 & Specification, Page 11, Paragraph 25). The AAPA also discloses varying the parameter "Tmin" so as to increase/decrease the number of time slots in the group of time slots (Fig. 1-2 & Specification, Page 11, lines 1-20). However, the AAPA does not disclose the pulse to encode a data element not only by a unique time position but also by a unique phase position and encoding data that is more than fifteen bits long.

McCorkle discloses a method and apparatus for a communication system comprising a transmitter and a receiver implementing pulse position modulation (PPM) to encode data (Specification, Page 5, Paragraphs 64 & 66). McCorkle also discloses implementing a combination of modulation scheme i.e. combine the use of PPM with other modulation schemes such as bi-phase modulation or multilevel quadrature phase modulation etc. so as to increase the data density (Specification, Page 6, Paragraphs 74 & 76-77). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that McCorkle teaches implementing a combination-modulating scheme such as PPM-bi-phase modulation or multilevel quadrature phase modulation and this is implemented in the method as described in the AAPA so as to increase the bits per hertz transmitted as well as reducing the amount of transmitted power per symbol transmitted to transmit a predetermined amount of data, thus satisfying the limitations of the claims. Furthermore, there is no criticality in encoding data that is more than fifteen bits long, this is a matter of design choice, and further this is possible with selecting a appropriate modulation scheme to combine with PPM as taught by McCorkle to achieve the desired encoding result. Furthermore, there is no criticality in having time slots have a non-uniform spacing; this is a matter of design choice depending on the data to be transmitted.

7. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of McCorkle (PG-PUB. 2002/0064245) in further view of Maggio et al. (6,882,689).

Regarding to Claim 12, the AAPA in view of McCorkle discloses a method and apparatus for transmitting a signal comprising a combination-modulating scheme such as PPM-bi-phase modulation or multilevel quadrature phase modulation etc. so as to increase the data density as described above. However, the AAPA in view of McCorkle does not disclose the data to be ascertainable by mapping.

Maggio discloses mapping the digital data implemented in a PPM modulation scheme, the inverse of this is implemented in the receiver to ascertain the transmitted / received data (Fig. 1, element 35 & Column 6, lines 45-54). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the AAPA in view of Maggio teaches implementing a mapper to ascertain the transmitted data, thus satisfying the limitations of the claim.

8. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over the Applicant Admitted Prior Art (AAPA) in view of McCorkle (PG-PUB. 2002/0064245) in further view of Burke et al. (4,677,656).

Regarding to Claim 18, The Applicant Admitted Prior Art (AAPA) in view of McCorkle discloses a method and apparatus for transmitting a signal comprising a combination-modulating scheme such as PPM-bi-phase modulation or multilevel quadrature phase modulation etc. so as to increase the data density as described above. However, the AAPA in view of McCorkle does not disclose the data transmitted to be a header, an error detection message, a synchronization, and / or data message.

Burke discloses a two-way radio communications system for transmitting data in packets between remote transceivers (Abstract, lines 1-14 & Fig. 1). Burke further discloses the data packet transmitted with a header (Column 14, lines 45-68 & Fig. 7-9); an error detection message (Column 13, lines 35-45 & Fig. 7, 9); a synchronization element (Fig. 7 & Column 14, lines 1-8); and a data message (Fig. 7-9 & Column 14, lines 1-4, 45-48). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention that the data protocol as described in Burke and is implemented and transmitted by the modulation scheme as described in the AAPA in view of McCorkle, thus satisfying the limitations of the claim.

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sudhanshu C. Pathak whose telephone number is (571)-272-3038. The examiner can normally be reached on M-F: 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Chieh M. Fan can be reached on (571)-272-3042.

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Sudhanshu C. Pathak
Examiner
Art Unit 2611

CHIEH M. FAN
SUPERVISORY PATENT EXAMINER